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ABSTRACT

In an integrated turbogenerator system having an air intake for a compressor to supply combustion air to a combustor, an electric brake device such as a resistor is connected to the electrical power output of the turbogenerator and is situated in the air intake to be cooled by the stream of combustion air flowing into the intake. When load transients require unloading excess electrical power produced by the turbogenerator, the brake resistor is supplied with at least part of the excess electrical power to create heat energy and thereby heat the in-flowing combustion air to lower the combustor efficiency, turbogenerator power produced, and excess electric power to be unloaded. An algorithm may be provided for controlling the turbogenerator speed deceleration rate to maintain the brake resistor at or near a physical temperature limit.

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